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A Tale of Two Outcomes: Remission and Exacerbation in the Use of Trauma-Focused Imaginal Exposure for Trauma-Related Voice-hearing. Key Learnings to Guide Future Practice.

Rachel M. Brand[a], Amy Hardy[bc], Sarah Bendall[d], Neil Thomas[a]

a. Centre for Mental Health, Swinburne University, PO Box 218, Hawthorn VIC 3122, Australia
b. Institute of Psychiatry, Psychology & Neuroscience, King's College London, U.K.
c. South London & Maudsley NHS Foundation Trust, U.K.
d. Orygen: The National Centre of Excellence in Youth Mental Health, 35 Poplar Road, Parkville, VIC, 3052, Australia
e. The Centre for Youth Mental Health, The University of Melbourne, VIC 3010, Australia

Corresponding author:

Rachel M. Brand

Centre for Mental Health, Swinburne University, PO Box 218, Hawthorn VIC 3122, Australia

rbrand@swin.edu.au, +61 490107705

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Ethical Statements

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Abstract

Objective: Many people who hear voices (also termed auditory-verbal hallucinations) have experienced traumatic or adverse life events. There is growing evidence that, for a number of people, these events are an important contributing factor to voice-hearing experiences. Psychological mechanisms implicated in the trauma-voice-hearing relationship overlap with those involved in posttraumatic stress disorder, giving a strong rationale for the use of exposure-based trauma-focused therapies for distressing voices. There is currently limited clinical guidance in this area and, despite preliminary evidence of effectiveness, clinicians report reluctance to deliver these therapies. We believe that two key questions will be important in informing the delivery of exposure-based trauma-focused therapies for distressing voices; namely, what influences their acceptability and tolerability, and who is most likely to benefit?

Method: We present two case illustrations from an ongoing pilot trial in which people with trauma-related voices received six sessions of imaginal exposure.

Results: Tara and Laura had very different therapy outcomes and we believe their experiences provide some initial insights into processes and factors that may impact on the delivery of exposure-based trauma-focused therapies for voice-hearing.

Conclusions: We highlight the potential for symptom exacerbation in early sessions and consider how this might influence acceptability, including the possibility that exposure therapy may be less tolerable when clients have persecutory appraisals of their voice-hearing experience. We also explore the potential therapeutic importance of associations between trauma and voices, suggesting exposure therapy is particularly indicated when there is a direct link between the content of voices and the index trauma.

Key words: exposure, hallucinations, hearing voices, psychosis, trauma, trauma-focused.

Key points

- Many people who hear voices have experienced traumatic events and posttraumatic sequelae may contribute to voices.
- Trauma-focused imaginal exposure may be helpful for people with trauma-related voice hearing experiences, particularly those with a direct link between the content of their voices and their index traumatic event.
- There is potential for symptom exacerbation in early sessions of exposure-based trauma-focused therapies for distressing voices this should be considered when planning exposure work and should be monitored throughout therapy.

Introduction

Hearing a voice in the absence of a corresponding external stimulus (variously termed ‘auditory verbal hallucinations’, ‘hearing voices’, or ‘voice-hearing’) is a common experience for people meeting a range of diagnostic criteria (including schizophrenia spectrum disorders, mood disorders, borderline personality disorder, and posttraumatic stress disorder) and is often associated with significant distress. Research suggests that multiple bio-psycho-social processes are involved in the formation and maintenance of voices.

In recent years there has been an increasing interest in the role of trauma and posttraumatic sequelae in voice-hearing. There is now compelling evidence that traumatic life-events are associated with psychotic symptoms, including voice-hearing (Varese et al., 2012), and that this association may be causal (Kelleher et al., 2013).

It is apparent that not all voice-hearing experiences are related to trauma (Luhrmann et al., 2019); however, the content of voices bears a meaningful relationship to traumatic life-events for a large proportion of people. Within a sample of voice-hearers with a trauma history, it was found that 13% had a literal content link, and 45% had a thematic link between their voices and trauma (Hardy et al., 2005). This group may represent those for whom trauma is particularly relevant.

Hardy (2017) reviews evidence indicating two different pathways from trauma to voice-hearing, with episodic memory, negative schematic beliefs, and emotion-regulation strategies differentially implicated in each pathway (see Williams, Bucci, Berry, & Varese, 2018 for an in-depth synthesis of this literature). Firstly, some trauma-related voices may be a form of posttraumatic intrusion that is particularly decontextualised and fragmented and is therefore not recognized to be a memory, but experienced as a current external threat. The development and maintenance of these voices is primarily linked to the encoding and retrieval of episodic memories, with emotional regulation and beliefs also playing a role. At times of extreme emotion (such as in traumatic events), shifts in information-processing can lead to vivid, fragmented, sensory-perceptual memories that are vulnerable to intruding into consciousness. These changes in the encoding of memories during traumatic events (termed 'data-driven' processing) are central in contemporary theories of PTSD and are thought to contribute to posttraumatic intrusions and flashbacks (Brewin, Gregory, Lipton, & Burgess, 2010; Ehlers & Clark, 2000). As psychosis is associated with impairments in spatial and temporal integration, it has been suggested this may account for even more severe decontextualization, such that an intrusion is experienced without any autonoetic recollection (Steel, Fowler, & Holmes, 2004).

In contrast, the second pathway proposes that some voices are not directly linked to episodic memory, but instead represent auditory images (or anomalous experiences). These voices have indirect links to trauma as their content and appraisals are shaped by beliefs about the self and others abstracted from traumatic events and stored in autobiographical memory. They are also influenced by regulation strategies developed as survival mechanisms during trauma, such as dissociation, avoidance, and hypervigilance, given the impact of these processes on sensory-perceptual processes.

Notably, the posttraumatic mechanisms implicated in both hypothesised pathways to voice hearing are also associated with the development of PTSD (Brewin et al., 2010; Ehlers & Clark, 2000; Foa & Kozak, 1986) and are the targets of well-

evidenced psychological interventions for PTSD (prolonged exposure, trauma-focused CBT, and Eye Movement Desensitisation and Reprocessing therapy). The significant overlap in the phenomenology and psychological mechanisms involved in trauma-related voices and PTSD provides a clear rationale for the application of trauma-focused therapies (well established in their effectiveness for PTSD) in treating distressing voices. Despite people with psychosis historically being excluded from trials of trauma-focused therapies, recent trials have shown positive effects on PTSD in this population, as well as indicating the safety of using such interventions (e.g. van den Berg et al., 2015a, 2015b). Our recent meta-analysis also showed that trauma-focused treatments in these trials have promising effects on positive symptoms of psychosis, though this has generally been examined as a secondary outcome (Brand, McEnery, Rossell, Bendall, & Thomas, 2017).

There is growing interest in the application of trauma-focused therapies specifically targeting trauma-related voice-hearing. Two recent case series included aspects of exposure to voice-related trauma memories in their treatment protocols, with encouraging results (Keen, Hunter, & Peters, 2017; Paulik, Steel, & Arntz, 2019). Despite the growing interest in the area, there remains limited guidance for clinicians in the delivery of trauma-focused therapies for trauma-related psychotic symptoms. Guidance does exist regarding the conceptualization and treatment of trauma-related psychotic symptoms with EMDR (van den Berg, van der Vleugel, Staring, de Bont, & de Jongh, 2013) but there is little information to guide clinical practice using other trauma-focused approaches. Guidance in the use of exposure-based trauma-focused therapies is perhaps particularly important. Despite indications that these therapies may be the most potent in addressing posttraumatic symptoms in psychosis (Hardy & van den Berg, 2017), in practice, they are rarely delivered due to clinician concerns about safety and tolerability (Gairns, Alvarez-Jimenez, Hulbert, McGorry, & Bendall, 2015). In order to increase the delivery of acceptable and effective exposure-based trauma-focused therapies for trauma-related psychotic symptoms we believe guidance is needed regarding two main questions–what factors impact on their acceptability and tolerability, and who is most likely to benefit?

As part of our research program in this area, we are conducting a pilot-trial of a trauma-focused therapy component (imaginal exposure) for trauma-related voice-hearing (ANZCTR: 1261600150341), with quantitative and qualitative findings forthcoming. Our experience of delivering therapy in this trial has led to some insights

that we believe may provide some tentative guidance in relation to the delivery of trauma-focused therapies for psychosis. In this paper we will illustrate these insights through comparing and contrasting the experiences of two participants (Tara and Laura) who had very different responses to therapy.

Methods

Intervention

Tara and Laura were both offered six-sessions of trauma-focused imaginal exposure based on Foa's Prolonged Exposure (PE) manual (Foa, Hembree, & Rothbaum, 2007). Prolonged exposure is a specific cognitive behavioural therapy in which clients are supported to approach (rather than avoid) trauma-related memories, emotions, and situations. We chose to use the PE protocol because it has, arguably, the best evidence base for treating PTSD symptoms. Additionally, PE is one of the only trauma-focused therapies that has so far been studied in a large trial in a psychosis population (van den Berg et al., 2015a). We chose to deliver only the imaginal exposure aspects of the therapy because we were particularly interested in the impact of elaborating and contextualising the trauma memory on voice hearing and re-experiencing symptoms.

Imaginal exposure in the PE protocol involves exposure to the trauma memory for a prolonged time in sessions through repeated recounting of the trauma narrative, and listening to audio recordings of these trauma narratives between sessions. When revisiting the trauma memory, the client will typically have their eyes closed and will be asked to imagine the memory in detail in their mind, whilst recounting it in the first person, present tense. During the imaginal exposure the therapist closely monitors levels of distress using a subjective units of distress rating scale (SUDS, 0-100). Additionally, following the exposure exercise the client and therapist spend time exploring the client's reactions to the imaginal exposure, as well as any thoughts or beliefs that may be maintaining trauma-related distress. Clients were encouraged to listen to audio of the exposure session each day during the week between sessions. The main adaptation to the PE imaginal exposure protocol for the cases described here was in the first session, which had an additional emphasis on exploring links between traumatic events and voice content.

In contrast to standard PE, in which the targeted trauma memories are those that are most intrusive, we targeted those recognised as having a link with voice content.

These were identified through collaborative formulation of voice-trauma links in the baseline assessment session and session one of treatment. Following this, the trauma memories identified as the most representative of distressing voice content, or that were most intrusive were prioritised for exposure work. Initial exposure sessions focused on a whole narrative of the traumatic event. Later exposure sessions were focused on memory 'hotspots' (i.e. those parts of the memory that seemed to most represent the most distressing beliefs or emotions).

The therapy was delivered by a doctoral level, registered clinical psychologist (nine-years post-qualification) with experience in trauma-focused therapies for PTSD and in psychological therapies for psychosis (RB). Overall supervision was provided by a senior clinical psychologist with extensive experience in psychological interventions for voice-hearers (NT). In addition, consultation regarding the therapy protocol and delivery was provided by two specialists in the delivery of trauma-focused interventions for people with psychosis (SB and AH). An overview of the content of each therapy session is shown in table 1.

Outcome measures

Tara and Laura were given outcome measures at baseline, post-therapy and at one-month follow-up. A researcher who had not been involved in the therapy conducted all follow-up assessments.

Psychiatric diagnosis was confirmed using the MINI 7.0 (Sheehan et al., 1998) and the Structured Clinical Interview for DSM 5 Borderline Personality Disorder scale (SCID 5 BPD, First, Gibbon, Spitzer, & Williams, 1997).

Trauma history was assessed using the Life Events Checklist for DSM-5 (LEC-5, Weathers et al., 2013b) and the Childhood Trauma Questionnaire (CTQ, Bernstein & Fink, 1998).

Voice hearing severity was assessed using the Psychotic Symptom Rating Scales – Auditory Hallucinations Scale (PSYRATS-AHS, Haddock, McCarron, Tarrier, & Faragher, 1999).

PTSD diagnosis and symptom severity was ascertained using the Clinician Administered PTSD Scale for DSM-5 (CAPS-5, Weathers et al., 2013a).

The disorganisation and intrusiveness of the trauma memory was measured using the trauma memory questionnaire (TMQ, Halligan, Michael, Clark, & Ehlers, 2003). A 5-item disorganisation subscale assesses deficits in intentional recall and an

8-item intrusiveness subscale assesses a wider range of phenomenological characteristics such as the associated emotion and reliving, vividness and 'nowness' of the memory of the event.

Posttraumatic cognitions were assessed using the Posttraumatic Cognitions Inventory (PTCI, Foa, Ehlers, Clark, & Orsillo, 1999).

Additionally, Tara and Laura rated voice and memory intrusion frequency and distress (0-10) at the beginning of each session.

Case Descriptions

Tara: full remission of intrusive trauma memories and voice-hearing

Presenting problem

Tara was a woman in her late thirties who had a 23-year history of hearing derogatory and commanding voices. Tara also experienced intense mood states, stress-induced dissociation, and suicidal ideation. Tara reported hearing two main voices, identified as being the perpetrators of previous abuse she had experienced. These voices were almost continuous and would make derogatory comments, for example "you'll never be good enough", "you're stupid". The voices would also tell her that she should kill or harm herself.

Assessment

Tara met diagnostic criteria for borderline personality disorder and PTSD. She reported a history of emotional, physical, and sexual abuse by two prominent male figures in her life. She scored 37 on the PSYRATS-AHS, endorsing almost-continuous, threatening male voices that caused significant distress and impact on her functioning. Tara felt she had no control over the voices. She identified that the content of the voices often matched what was said to her during episodes of abuse, for example repeatedly saying, "you're stupid". Tara also heard content that she did not relate to past memories, including commands to harm herself. Tara's voices were often accompanied by intrusive images of her abusers' faces. Tara strongly endorsed items indicating that her trauma memories were intrusive and disorganized. Her scores on the PTCI suggested high levels of negative posttraumatic beliefs about herself and the world, and self-blame. Tara's pre-therapy assessment scores are shown in Table 2.

Formulation

Many of Tara's voice-hearing experiences had a direct link with the content of her experiences of abuse. We therefore hypothesised that these voices were a form of

posttraumatic intrusion, caused by 'unprocessed' trauma memories (stored in a sensory-perceptual, fragmented, and decontextualised form). Tara also had voice content that was not directly related to trauma content, including commands to harm herself and other derogatory comments. We hypothesised these were auditory images that had been shaped by other trauma-related sequelae, such as negative beliefs about herself, related low mood, and dissociative emotion regulation that had been developed as a survival strategy.

Course of therapy

The initial therapy session focused on education about the nature of trauma memories and the role of avoidance in maintaining intrusions. Tara had previously appraised her voices as being part of an 'illness', but through discussion in the sessions, identified with the idea that some of the voices might be some kind of 'replay' of trauma memories, similar to the other intrusions she was having. Tara was nervous about the idea of doing exposure work, but felt she could draw on skills she had learnt in a previous course of dialectical behaviour therapy (DBT) to help her to cope with any distress or dissociative reactions. Exposure work focused on two trauma memories that were associated with the content of Tara's voices and related intrusions. In session two, we conducted imaginal exposure to a prolonged incident of emotional and physical abuse experienced in adulthood. Session three involved exposure to one main hotspot from this memory (her abuser pinning her against a door and yelling at her). Cognitive processing work in these sessions centred on self-blaming beliefs. Tara experienced habituation of her distress response within and between exposure sessions. By session four, she reported no further intrusions relating to this particular memory and indicated that the voice of this abuser was less frequent. At this stage, Tara was still having intrusions and voices related to memories of emotional and physical abuse that occurred in childhood. Exposure sessions four and five therefore focused on a particularly intrusive memory from this time, in which her abuser called her stupid and physically assaulted her. Cognitive processing work following imaginal exposure explored Tara's belief that she was stupid, and self-blame for the childhood abuse. By session five, Tara reported minimal distress during exposure to this memory. In session six, Tara completed a final, elaborated narrative of both memories.

Outcomes

Tara's baseline, post therapy and one-month follow-up assessment scores are shown in table 2, with main outcomes (PSYRATS-AHS and CAPS-5) also plotted in figure 1. By the end of therapy and at one-month follow-up she was no longer hearing voices and did not meet diagnostic criteria for PTSD. Tara reported that her trauma memory was less disorganised and no longer intrusive. Her negative posttraumatic beliefs also decreased. Tara described finding the therapy challenging, but that through the process of confronting the memories, they became less vivid and distressing. Tara was also able to update unhelpful posttraumatic beliefs, stating "this was nothing to do with me, it was about [the abusers'] issues". Session-by-session ratings (see Figure 2) show an increase in posttraumatic intrusions and voices after session one and then a total remission of these experiences following session four.

Symptom exacerbation and therapy termination: Laura

Presenting difficulties

Laura was a woman in her mid-forties who had heard critical and bullying voices for 10 years. Laura heard multiple, unidentified voices that she perceived as coming from neighbours and passers-by. Laura described hearing people insulting and judging her, for example saying, "I don't like her". Laura was concerned that people in her local area were monitoring her and subjecting her to ongoing persecution. Laura also described persistent low mood and anxiety.

Assessment

Laura met diagnostic criteria for a major depressive disorder with psychotic features. She experienced significant emotional bullying and victimisation in her adolescent years, and throughout her adult life. This included severe bullying at school and emotional abuse by a caregiver. Laura met the symptomatic threshold for PTSD, although did not meet diagnostic criteria for PTSD based on criterion A (as her index trauma did not involve physical harm or sexual violence). Laura did not have intrusive memories of her victimisation experiences, but did experience significant emotional and physiological reactivity to reminders. Laura scored 34 on the PSYRATS-AHS, endorsing almost continuous, derogatory voices, causing significant distress. Laura felt she had no control over the voices. Laura did not identify that any of the content of the voices was a direct 'replay' of things heard during her trauma. Laura's TMQ scores suggested that her trauma memories were not disorganised but were intrusive. Her

scores on the PTCI suggested high levels of negative posttraumatic beliefs about herself and the world, and self-blame. Laura had previously had cognitive behavioural therapy for her voices, with a particular focus on coping strategy enhancement.

Formulation

We identified that Laura's voices had a thematic link to her past victimisation experiences. During these experiences, she felt vulnerable and humiliated and this was mirrored in the content of the voices. We hypothesized that Laura's negative beliefs about herself and others were contributing to the content of the voices. Laura's voices were also serving as a reminder of her victimisation experiences and triggering trauma-related emotional and physiological responses. Laura was then enlisting a learnt survival strategy of hypervigilance to manage these difficult feelings, which was leaving her more vulnerable to noticing the comments from her neighbours.

Course of therapy

Laura attended two therapy sessions. The first session focussed on education about the nature of trauma memories, the role of avoidance, and exploring the links between Laura's voices and other posttraumatic sequelae. Laura understood the rationale for exposure work and was keen to reduce the impact of her negative posttraumatic beliefs and reduce her reactivity to reminders of the victimisation. The first exposure session focussed on a memory of bullying from high school in which she was publicly humiliated by a group of girls. Laura reported high levels of distress, but did experience habituation within the session. Cognitive processing work after the exposure exercise focused on reappraising negative peri and posttraumatic beliefs about herself. Several days after this session Laura phoned the therapist and stated that she did not want to continue with the therapy. After the session she experienced high levels of distress, and this was exacerbated when she listened to the session audio at home. She also reported an increase in the voices and victimisation by her neighbours, which made it too difficult to confront and process her past victimisation experiences.

Outcomes

Laura's baseline, post-therapy and one-month follow-up assessment scores are shown in Table 3, with main outcomes (PSYRATS-AHS and CAPS-5) in Figure 3. Laura experienced an increase in voices and PTSD symptoms post therapy, but this had decreased again by one-month follow-up. Laura's session-by-session ratings (see Figure 4) also show that her voices and memory intrusions worsened after the first exposure session, prior to her ceasing the therapy. The process measures suggest that

the intrusiveness of Laura's trauma memories did decrease, but that the disorganisation of this memory and her negative posttraumatic beliefs actually increased.

Discussion

Tara and Laura's therapy outcomes are at the extreme ends of our experience in delivering imaginal exposure for trauma-related voices. Examining the characteristics and experiences of 'extreme responders' to a therapy can help to inform therapy dissemination and development (e.g. Coffman et al., 2007). We use Laura and Tara's experiences to illustrate learning that is also reflective of our wider experience of delivering imaginal exposure for trauma-related voices.

Symptom exacerbation and the tolerability of exposure-based trauma-focused therapies for trauma-related voices.

There have long been concerns that trauma-focused therapies may lead to symptom exacerbation for people with psychosis, however recent trials have indicated this is not the case, at least in controlled trial scenarios, (see Brand et al., 2017 for a review). A qualitative study in an early psychosis population, on the other hand, included some reports of symptom exacerbation following talking about trauma (Tong, Simpson, Alvarez-Jimenez, & Bendall, 2017). Symptom exacerbation was relatively transient and did not affect outcomes (Tong et al., 2017). This is line with literature relating to the use of trauma-focused therapies for PTSD, which has indicated that many people do experience symptom exacerbation; but that this group go on to have clinically significant improvement by the end of therapy (Larsen, Wiltsey Stirman, Smith, & Resick, 2016).

Our experience has been that temporary symptom exacerbation is a common experience in the early sessions of exposure therapy for trauma-related voices. Both Laura and Tara experienced increases in posttraumatic intrusions and voices in their early sessions, however Tara went on to experience significant reduction in these symptoms and Laura's scores returned to baseline levels at one-month follow-up. In line with previous research, this suggests a transient increase in symptoms that does not affect outcomes. Our experience has also been that most people find this temporary symptom exacerbation tolerable, but that some find it unmanageable and may discontinue therapy as a result.

We suggest that it is important to consider the possibility of symptom exacerbation when planning trauma memory exposure work. Clients should be informed that temporary distress and symptom exacerbation might be a possibility and

necessary supports for managing this put in place. Several factors may impact on an individual's ability to tolerate temporary symptom exacerbation. In Tara's case, her living context, prior therapy experience and appraisals of her voices contributed to her positive experience with therapy. Tara was living in a safe environment and no longer felt under threat from other people. She had completed a course of DBT ten months prior and this gave her confidence that she could manage the therapy. She also had an internal appraisal of her voices (seeing them as part of her diagnosis, or as trauma memories), which likely reduced her reactivity to increases in voices. Laura, on the other hand, did not feel safe in her home environment due to her concerns about ongoing victimisation. Her appraisal that the voices were coming from her neighbours, meant that the increase in voices in the first two sessions was very difficult to tolerate. This did not appear to be mitigated by the fact she had previously had cognitive behavioural therapy for voices, including coping strategy enhancement. When treating PTSD, current safety is a priority and trauma-focused work would ideally not commence until a person is in a sufficiently stable and safe environment. This may also be a key consideration in working with people with trauma-related voices. Persecutory appraisals of the voices mean that clients may not have a subjective sense of safety from which to process past traumas. Laura's feedback was that her current lack of safety meant that she did not feel able to manage processing her memories of past victimisation. In this situation, it may be that work needs to be done with persecutory beliefs and associated distressing appraisals of voices (e.g. using cognitive behavior therapy for psychosis, CBTp) prior to any memory exposure.

Given the possibility of transient symptom exacerbation, we would suggest that the timing of delivering exposure-based trauma-focused therapy is most appropriately negotiated within a safe therapeutic relationship. Clients and clinicians can collaboratively weigh the risks of temporary symptom exacerbation against the potential benefits of exposure work, and (if necessary) build internal and external contexts that make this more tolerable if a client wishes to proceed. This work would be akin to phase one in a phase-based approach to trauma therapy, in which the focus is on safety and stabilisation (Herman, 1992) and might involve practical support to ensure a safe living situation, strengthening of coping skills, and therapies that can reduce threat based appraisals and emotions (e.g. CBTp including third wave approaches such as compassion focused therapy). Additionally, this needs to be monitored and revisited throughout the therapy process. Importantly, not everyone

appears to need this preparation work and, given the potential benefits, we believe that it is important that exposure-based trauma therapies are not unnecessarily delayed when collaborative formulation indicates the relevance of decontextualised trauma memories.

Who is most likely to benefit from exposure-based trauma-focused therapies for distressing voices?

It is not yet clear how to determine who will benefit most from trauma-focused therapies for voice-hearing experiences. Trauma-voice links are often complex and heterogeneous, and trauma memories are only relevant for a proportion of people (Hardy, 2017). Based on clinical experience (including the clients presented here) we hypothesise that imaginal exposure to the trauma memory is most appropriate when voice-hearing experiences are directly related to trauma memories, particularly when aspects of voice content represent a re-experiencing of trauma content. The presence of related intrusive trauma memories may also suggest that imaginal exposure to the trauma memory is indicated. In Tara's case, many (but not all) of her voices had a direct link with her traumatic experiences (i.e. were exact replays of content heard at the time of the traumas). She also had other, related, intrusions to the trauma memory (images of her abuser's faces). Our formulation of Tara's voices was that they were related to trauma memory encoding that was predominantly at a perceptual level, such that encoded sensory based, decontextualized memories were being re-experienced as voices and other related intrusions. It appears that the exposure therapy worked through the mechanisms we might expect – elaborating the trauma memory into a more contextualised, episodic form, and thus reducing intrusive re-experiencing.

Conversely, Laura's voices had a thematic link with her traumas (rather than being direct replays) and she did not have any related intrusive memories of her victimisation experiences. The voices were formulated to be auditory images arising as a result of negative beliefs about herself and others, as well as hypervigilance to social threat (learnt as a survival mechanism). Given the hypothesised mechanisms involved in Laura's voices, trauma-focused therapies primarily targeting negative peri or posttraumatic beliefs (for example cognitive therapy or imagery rescripting) and therapies that help to down regulate threat-based attentional systems through strengthening safety and soothing systems (for example, compassion focussed therapy or DBT) may have been more tolerable and effective. The fact that Laura did not have intrusive memories of her victimisation experiences may also be important in understanding why imaginal exposure was less tolerable and effective, since imaginal

exposure has a much clearer rationale (and demonstrated effectiveness) in the presence of intrusive trauma memories.

Research Implications

The hypotheses discussed here will need to be explored further in both qualitative and quantitative studies, testing a range of trauma-focused approaches for people with trauma-related voices. The diversity in treatment response described here suggests that future trials should aim to measure the full range of outcomes, rather than focusing on group means, which can obscure between-person differences in treatment response. Particularly, studies can focus on reporting the number of people experiencing reliable change in both a positive and a negative direction (to capture those who significantly improve or deteriorate). Additionally, well-powered trials are needed in order to understand individual factors that moderate response to different trauma-focused therapies. This will provide a more robust evidence base for clinical decision-making about safe and effective timing and delivery of trauma-focused therapies for distressing voices. Finally, trials are needed that compare the acceptability, safety and efficacy of phase-based trauma therapies (i.e. those that include other 'stabilising' therapies prior to trauma-focused work) with standard trauma-focused therapies.

Conclusion

Tara and Laura's stories illustrate the potential therapeutic importance of understanding associations between trauma and voices, with those with a direct link perhaps more likely to see benefits from exposure therapy, while those with indirect links may benefit more from trauma-focused and non-trauma-focused approaches that target beliefs and emotion regulation. Additionally, we have highlighted the potential that exposure therapy may be less tolerable when clients have persecutory appraisals of their voice-hearing experience, given the ongoing sense of physical or social threat. Finally, our experience of delivering short-term therapy in which exposure is commenced in session two has shown that some people find this manageable, while others may benefit from a focus on creating objective and subjective safety prior to exposure work. These hypotheses borne from our clinical experience will need further exploration in qualitative and quantitative treatment research using a range of trauma-focused approaches for people with trauma-related voices.

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Table 1. Treatment session content

Session	Content
1	• Initial ratings of voice and memory intrusion frequency and distress • Education regarding trauma and memory processing • Discussion regarding the role of avoidance • Review and elaboration of the client's trauma-voice link formulation established in the baseline assessment • An explanation of the rationale for imaginal exposure • Discussion of coping skills for managing any distress within and outside of sessions • Out of session task: client to read a hand-out regarding the nature of trauma memories and rationale for exposure
2-5	• Voice and memory intrusion ratings • Out of session task review • Imaginal exposure exercise – full narrative, or hotspot work (20-40 minutes) • Processing of cognitive and emotional aspects of the trauma • Out of session task: listen to imaginal exposure recording daily

6	• Voice and memory intrusion ratings • Out of session task review • Imaginal exposure exercise – fully elaborated trauma narratives (20 – 40 minutes) • Review of therapy progress and how client can continue to implement what they have learnt

Table 2. Tara's outcome scores

Measure (scoring range)	Baseline	Post-therapy	One-month follow-up
PSYRATS-AHS (0-44)	37	0	0
CAPS-5 (0-80)	55	4	0
TMQ- intrusions (0-4)	2.5	0	0
TMQ- disorganisation (0-4)	2.4	0.6	0
PTCI-total (33-231)	169	46	36
PTCI – negative self-beliefs (1-7)	5.05	1.37	1.05
PTCI- negative world beliefs (1-7)	5.14	1.71	1.14
PTCI-self blame (1-7)	5.4	1.20	1.20

Table 3. Laura's outcome scores

Measure (scoring range)	Baseline	Post-therapy	One-month follow-up
PSYRATS-AHS (0-44)	34	39	35
CAPS-5 (0-80)	25	36	18
TMQ- intrusions (0-4)	3.5	3	1.5
TMQ- disorganisation (0-4)	0.6	1.8	3
PTCI-total (33-231)	160	166	177
PTCI – negative self-beliefs (1-7)	4.68	4.79	5.16
PTCI- negative world beliefs (1-7)	5.43	6.00	6.43
PTCI-self blame (1-7)	4.20	4.40	4.80

Figure 1. Tara's outcome measures at pre, post and one-month follow-up.

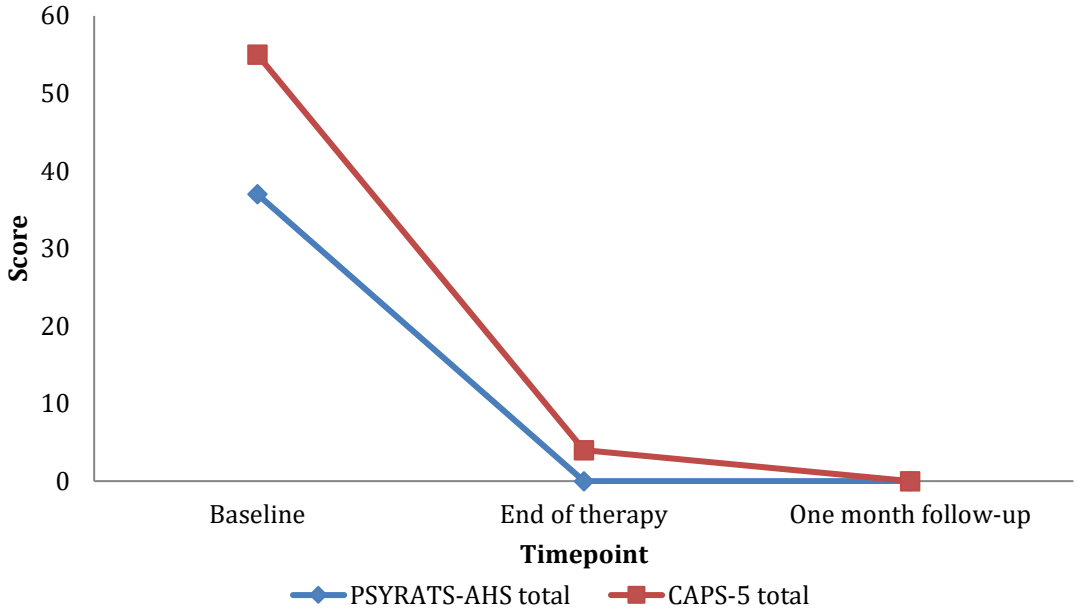


Figure 2. Tara's session-by-session ratings of voice frequency, voice distress, intrusion frequency, and intrusion distress.

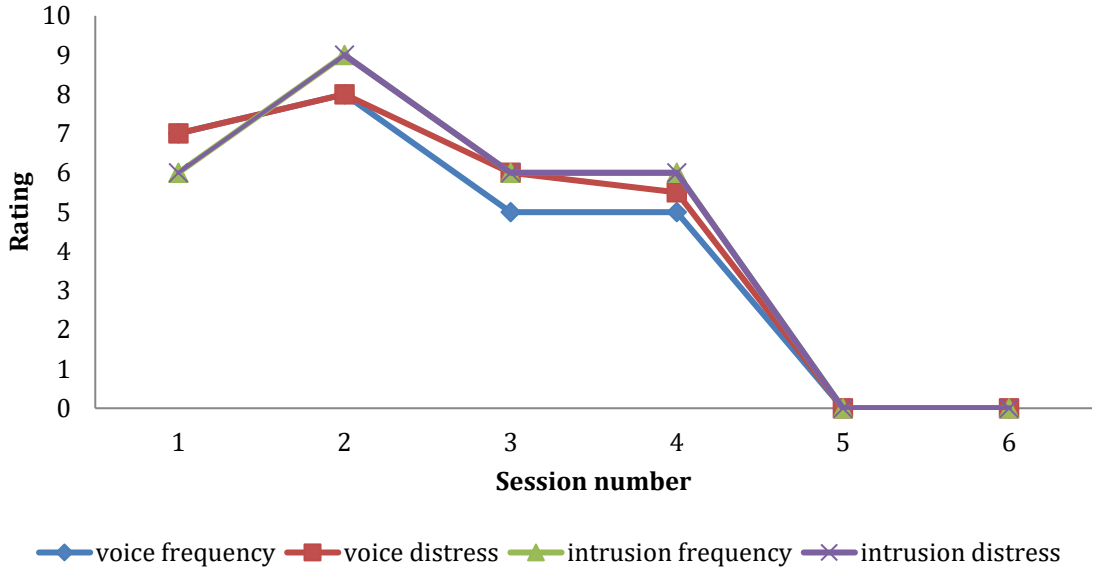


Figure 3. Laura's outcome measures at baseline, end of therapy and one-month follow-up.

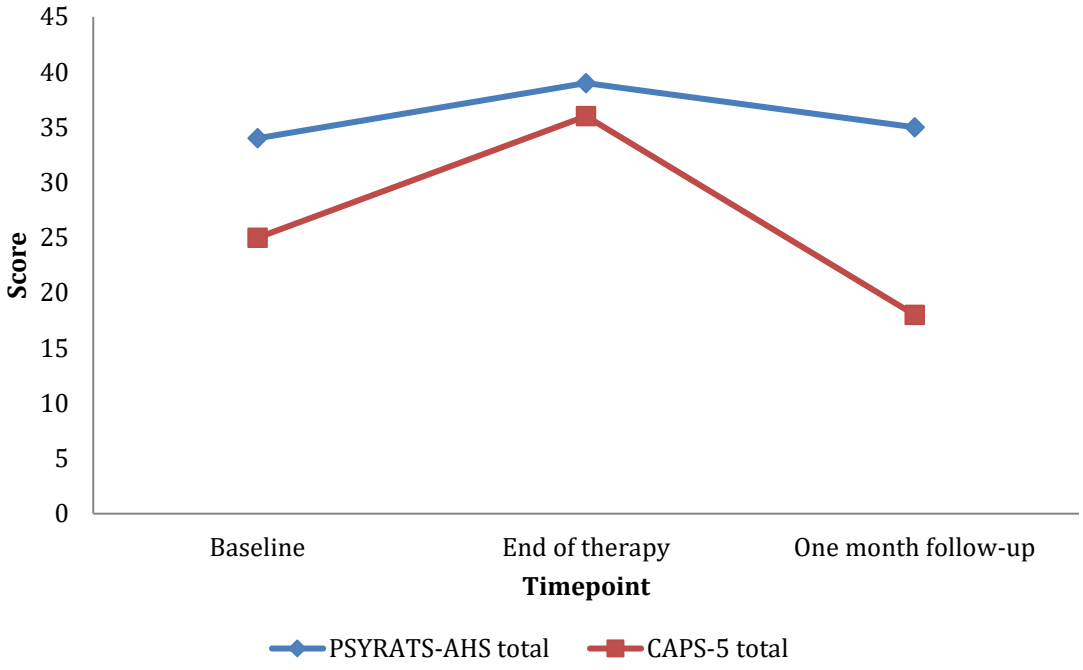
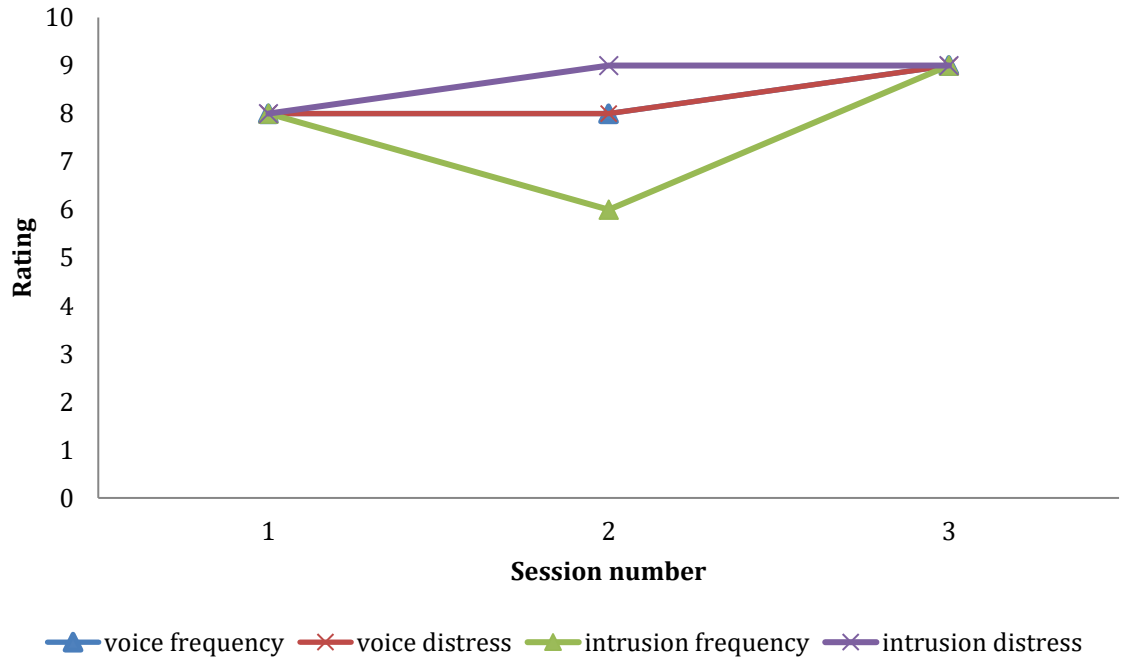


Figure 4. Laura's session-by-session ratings of voice frequency, voice distress, intrusion frequency, and intrusion distress.



Note: Laura gave her session 3 ratings over the phone one week after session 2.